

AMENDMENTS TO CLAIMS

Claim 1 (presently amended): A method for screening fabric handle of an array of fabric samples, comprising:

providing an array of at least four fabric samples upon at least one substrate;
providing at least one probe;

causing protrusions of each of said fabric samples through openings in said at least one substrate;

wherein said protrusions are caused by contacting a said at least one probe with said fabric samples using an automated system that moves said at least one probe, said fabric samples, or both relative to each other in at least two orthogonal directions; and

wherein said protrusions are caused at a throughput rate no greater than about two minutes per sample; and

monitoring a response of each of said fabric samples to said protrusions for assisting in measuring relative fabric handle for each of said fabric samples.

Claim 2 (original): The method of Claim 1, wherein the method is capable of screening at least two of said fabric samples simultaneously.

Claim 3 (original): The method of Claim 1, wherein the method is capable screening at least twenty-four of said fabric samples simultaneously.

Claims 4-5 (canceled)

Claim 6 (original): The method of Claim 1, wherein average sample throughput is not more than about 20 seconds per said fabric sample.

Claim 7 (original): The method of Claim 1, wherein said array contain at least two different fabric materials.

Claim 8 (original): The method of Claim 1, wherein said fabric samples comprise of at least one material selected from the group consisting of woven materials, non-woven materials, knit materials, pile materials, blend materials, composite materials, and a combination thereof.

Claim 9 (original): The method of Claim 1, wherein at least one of said fabric samples has been subject to textile treatment selected from the group consisting of acrylic coating, airo finishing, bleaching, resin treatment, sanding, scenting, shearing, silver coating, wax coating, stonewashing, bonding, enzyme washing, flocking, glazing, mercerizing, milling, fulling, color treatment, texture treatment, bacterial resistant treatment, soil resistant treatment, oil repellent treatment, flame resistant treatment, pill resistant treatment, water resistant treatment, mildew resistant treatment, water repellent treatment, wrinkle resistant treatment, ultra violet resistant treatment, and a combination thereof.

Claim 10 (original): The method of Claim 1, wherein at least one of said fabric samples has been treated with an additive selected from the group consisting of binders, surfactants, fillers, reinforcements, flame retardants, colorants, environmental protectants, performance modifiers, control agents, plasticizers, cosolvents, accelerators, and a combination thereof.

Claim 11 (original): The method of Claim 1, wherein said protrusions are completed without piercing said fabric samples.

Claim 12 (original): The method of Claim 1, wherein said openings are shaped in a fashion that allows said fabric samples to fold naturally providing a smooth transition for said fabric samples to transfer from a flat state to a bent and folded state during said protrusions, and allows contact to exist between said fabric samples and said openings' interior walls during said protrusions.

Claim 13 (original): The method of Claim 1, wherein each of said openings is funnel-shaped having its top diameter that is about twice of its bottom diameter and its sloped section is about at least equal to height of its straight section.

Claim 14 (original): The method of Claim 1, wherein said openings are each individually surrounded by an indentation that restricts said fabric samples' horizontal movement.

Claim 15 (original): The method of Claim 1, wherein the diameter of said fabric samples is greater than about two times the diameter of said openings.

Claim 16 (original): The method of Claim 1, wherein the diameter of each of said fabric samples is less than about eighteen millimeters but is greater than about eight millimeters

Claim 17 (original): The method of Claim 1, wherein said protrusions causes said fabric samples to fold and are eventually and completely forced through said openings.

Claim 18 (original): The method of Claim 1, wherein each of said protrusions is of a distance at least equal to the radius of said fabric samples.

Claim 19 (original): The method of Claim 1, wherein said array of fabric samples are placed onto a sample holder having said openings and said fabric samples are individually confined in specific locations, each of said specific locations includes and extends beyond a region defined by diameter of said openings, and said fabric samples do not overlap each other.

Claims 20-21 (canceled)

Claim 22 (original): The method of Claim 1, further comprised of regulating environmental conditions of said fabric samples by an environmental chamber.

Claim 23 (presently amended): The method of Claim 1, wherein said protrusions are further caused by translating said fabric samples in a direction normal to an end of at least one probe ~~is conducted~~ at a constant speed less than about ten millimeters per second but greater than about one millimeter per second.

Claim 24 (original): The method of Claim 1, wherein said monitoring response of said fabric samples to said protrusions are performed by at least one sensor and a data logger for recording said response.

Claim 25 (original): The method of Claim 1, further comprised of conducting an analysis selected from the group consisting of relative comparison of the fabric handle of said fabric samples, quantitative measurement of the fabric handle of said fabric samples, and comparison of the fabric handle of said fabric samples with the fabric handle of fabric materials not included in said array.

Claim 26 (canceled)

Claim 27 (presently amended): The method of Claim 1 26, wherein monitoring said response of said fabric samples to said protrusions includes measuring said force exerted on said at least one probe by said fabric samples as functions of displacement between said at least one probe and said fabric samples.

Claim 28 (presently amended): The method of Claim 1 26, wherein monitoring said response of said fabric samples to said protrusions includes measuring said force exerted on said at least one probe by said fabric samples as functions of time.

Claim 29 (presently amended): The method of Claim 1 26, wherein said protrusions are caused by having said array placed in a movable sample holder translating in a direction normal to blunt end of said at least one probe.

Claim 30 (presently amended): The method of Claim 1 26, wherein said protrusions are caused by having a blunt end of said at least one probe translating in a direction normal to said array.

Claim 31 (presently amended): The method of Claim 1 26, wherein said at least one probe is comprised of a test fixture with a blunt end for protruding said fabric samples.

Claim 32 (original): A method for screening fabric handle of an array of fabric samples, comprising:

placing an array of fabric samples having at least eight different fabric samples into a sample holder having a first plate having a plurality of through-holes and a second plate having a plurality of openings that are aligned forming tunnels within said sample holder, and wherein said fabric samples do not overlap each other and are individually confined in specific locations that are between said first plate and said second plate, each of said specific locations includes and extends beyond a region defined by diameter of said openings, said openings having a diameter ranging from about eight millimeters to eighteen millimeters, the diameter of said fabric samples is greater than about two times the diameter of said openings; and a gap of at least about one millimeter gap exists between said first plate and said second plate;

protruding said fabric samples completely through said openings without piercing said fabric samples by translating said sample holder in a direction normal to the blunt end of at least one probe at a constant speed, wherein said openings are shaped in a fashion that allows said fabric samples to fold naturally providing a smooth transition for said fabric samples to transfer from a flat state to a bent and folded state during said protrusions, and allows contact to exist between said fabric samples and said openings' interior walls during said protrusions;

monitoring responses of said fabric samples to said protrusions with at least one sensor and a data logger for recording said response which includes measuring said force exerted on said at least one probe by said fabric samples as functions of displacement between said at least one probe and said fabric samples and

measuring said force exerted on said at least one probe by said fabric samples as functions of time; and

conducting an analysis selected from the following group consisting of relative comparison of the fabric handle of said fabric samples, quantitative measurement of the fabric handle of said fabric samples; comparison of the fabric handle of said fabric samples with the fabric handle of fabric materials not included in said array.

Claim 33 (original): The method of Claim 32, wherein the method is capable of screening at least four of said fabric samples simultaneously.

Claim 34 (original): A method for screening fabric handle of an array of fabric samples, comprising:

placing an array of fabric samples having at least two fabric samples onto a sample holder having a plurality of openings having a diameter ranging from about eight millimeters to eighteen millimeters, and wherein said fabric samples do not overlap each other and are individually confined in specific locations that are aligned with said openings, each of said specific locations includes and extends beyond a region defined by diameter of said openings, and the diameter of said fabric samples is greater than about two times the diameter of said openings;

protruding said fabric samples completely through said openings without piercing said fabric samples by translating blunt end of at least one probe in a direction normal to said array at a constant speed, wherein said openings are shaped in a fashion that allows said fabric samples to fold naturally providing a smooth transition for said fabric samples to transfer from a flat state to a bent and folded state during said protrusions, and allows contact to exist between said fabric samples and said openings' interior walls during said protrusions; and

monitoring responses of said fabric samples to said protrusions with at least one sensor and a data logger for recording said response which includes measuring said force exerted on said at least one probe by said fabric samples as functions of displacement between said at least one probe and said fabric samples and measuring said force exerted on said at least one probe by said fabric samples as functions of time; and

conducting an analysis selected from the following group consisting of relative comparison of the fabric handle of said fabric samples, quantitative measurement of the fabric handle of said fabric samples; comparison of the fabric handle of said fabric samples with the fabric handle of fabric materials not included in said array.

Claim 35 (original): The method of Claim 34, wherein average sample throughput is not more than about two minutes per said fabric sample.

Claim 36 (new): A method for screening fabric handle of an array of fabric samples, comprising:

providing an array of at least four fabric samples upon at least one substrate;
causing protrusions of each of said fabric samples through openings in said at least one substrate wherein said protrusions are caused by contacting a probe with said fabric samples using an automated system that moves said probe, said fabric samples, or both relative to each other and wherein said protrusions are caused at a throughput rate no greater than about two minutes per sample; and

monitoring a response of each of said fabric samples to said protrusions for assisting in measuring relative fabric handle for each of said fabric samples;

wherein said array of fabric samples are placed into a sample holder having a first plate having a plurality of through-holes and a second plate having a plurality of openings that are aligned forming tunnels within said sample holder wherein said fabric samples are individually confined in specific locations that are between said first plate and said second plate, and each of said specific locations includes and extends beyond a region defined by diameter of said openings.

Claim 37 (new): The method of Claim 36, wherein a gap of at least about one millimeter gap exists between said first plate and said second plate.

Claim 38 (new): The method of Claim 36, wherein the method is capable of screening at least two of said fabric samples simultaneously.

Claim 39 (new): The method of Claim 36, wherein the method is capable screening at least twenty-four of said fabric samples simultaneously.

Claim 40 (new): The method of Claim 36, wherein average sample throughput is not more than about 20 seconds per said fabric sample.

Claim 41 (new): The method of Claim 36, wherein said array contain at least two different fabric materials.

Claim 42 (new): The method of Claim 36, wherein said fabric samples comprise of at least one material selected from the group consisting of woven materials, non-woven materials, knit materials, pile materials, blend materials, composite materials, and a combination thereof.

Claim 43 (new): The method of Claim 36, wherein at least one of said fabric samples has been subject to textile treatment selected from the group consisting of acrylic coating, airo finishing, bleaching, resin treatment, sanding, scenting, shearing, silver coating, wax coating, stonewashing, bonding, enzyme washing, flocking, glazing, mercerizing, milling, fulling, color treatment, texture treatment, bacterial resistant treatment, soil resistant treatment, oil repellent treatment, flame resistant treatment, pill resistant treatment, water resistant treatment, mildew resistant treatment, water repellant treatment, wrinkle resistant treatment, ultra violet resistant treatment, and a combination thereof.

Claim 44 (new): The method of Claim 36, wherein at least one of said fabric samples has been treated with an additive selected from the group consisting of binders, surfactants, fillers, reinforcements, flame retardants, colorants, environmental protectants, performance modifiers, control agents, plasticizers, cosolvents, accelerators, and a combination thereof.

Claim 45 (new): The method of Claim 36, wherein said protrusions are completed without piercing said fabric samples.

Claim 46 (new): The method of Claim 36, wherein said openings are shaped in a fashion that allows said fabric samples to fold naturally providing a smooth transition for said fabric samples to transfer from a flat state to a bent and folded state during said protrusions, and allows contact to exist between said fabric samples and said openings' interior walls during said protrusions.

Claim 47 (new): The method of Claim 36, wherein each of said openings is funnel-shaped having its top diameter that is about twice of its bottom diameter and its sloped section is about at least equal to height of its straight section.

Claim 48 (new): The method of Claim 36, wherein said monitoring response of said fabric samples to said protrusions are performed by at least one sensor and a data logger for recording said response.

Claim 49 (new): The method of Claim 36, further comprised of conducting an analysis selected from the group consisting of relative comparison of the fabric handle of said fabric samples, quantitative measurement of the fabric handle of said fabric samples, and comparison of the fabric handle of said fabric samples with the fabric handle of fabric materials not included in said array.

Claim 50 (new): The method of Claim 36, wherein monitoring said response of said fabric samples to said protrusions includes measuring said force exerted on said at least one probe by said fabric samples as functions of displacement between said at least one probe and said fabric samples.

Claim 51 (new): The method of Claim 36, wherein monitoring said response of said fabric samples to said protrusions includes measuring said force exerted on said at least one probe by said fabric samples as functions of time.

Claim 52 (new): The method of Claim 36, wherein said protrusions are caused by having a blunt end of said at least one probe translating in a direction normal to said array.